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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,421	08/28/2003	Keisuke Kato	450100-04718	7245

7590 04/27/2005

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EXAMINER

MARC, MCDIEUNEL

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,421

Applicant(s)

KATO ET AL.

Examiner

McDieunel Marc

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11-19 and 26-28 is/are rejected.
- 7) ☒ Claim(s) 5-10 and 20-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/28/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-28 are presented for examination.
2. The abstract of the disclosure is objected to because the word "invention" should not be used in the abstract. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 11-19 and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi *et al.* (U.S. Pat. No. 5,349,277).

As per claims 1, 15 and 16, Takahashi *et al.* teaches a system and an associated legged mobile robot having a robot apparatus including a body and a plurality of movable parts connected to said body (see fig. 1, elements 12L, 12R, 16L, 16R, 18L and 18R), comprising: a plurality of movable part driving means for driving said movable parts (see abstract particularly *servo motors*, fig. 1, elements 12L, 12R, 16L, 16R, 18L and 18R); a local control loop for controlling one of said movable parts (see abstract and fig. 1 and col. 4, lines 14-18, 46-51); local control means for controlling said local control loop (see col. 14, line 52 – to – col. 15, line -5); a integrated control loop serving as a higher order control loop than said local control loop for controlling said local control loop (see col. 8, lines 42-61, wherein priority involves higher order of

control); integrated control means for controlling said integrated control loop (see col. 8, lines 42-61 as seen above); and priority determination means for determining priority between control amounts calculated by said local control means and said integrated control means to be used to control said movable parts (see col. 8, lines 42-61, wherein the ankle joints being considered as movable parts) based on a predetermined condition (see abstract, particularly predetermined interval and col. 12, lines 30-34); second control cycle shorter than the first control cycle being considered as design choice.

As per claims 2-3, 17-18, Takahashi *et al.* teaches a robot, wherein said priority determination means provides higher priority to the control amounts calculated by said local control means within an initial period of time after the control is started, but provides higher priority to the control amounts calculated by said integrated control means within a set period of time (see col. 14, line 52 – to – col. 15, line – 5, inherently the calculation has been performed after the starting period of the control, furthermore the priority feature invokes the use of time); high frequency and low frequency varies from Hz to Hz, therefore, such limitation being considered as design choice.

As per claims 4 and 19, Takahashi *et al.* teaches a robot, further comprising detection means for detecting states of different portions of said robot apparatus, wherein the predetermined condition is that any of detection values of said detection means exceeds a predetermined value or an unexpected detection value is outputted from said detection means (see col. 14, lines 35-51).

As per claim 11, Takahashi *et al.* teaches a robot, wherein aid local control apparatus comprises a data transmission apparatus for transmitting a control instruction to an associated one of said movable part driving means (see fig. 1, element 26), and said data transmission apparatus is connected in a daisy chain connection to a data processing apparatus, which is connected to the associated movable part driving

means, by a single transmission line (see fig. 1, element 26 and the encoders, wherein one wire/path being use to connect control unit and the encoders).

As per claims 12-14 and 26-28, Takahashi *et al.* teaches a robot, wherein said movable parts comprise a plurality of movable legs each having a foot part for contacting with a ground surface and alternately acting as a supporting leg and an idle leg to perform a legged operation, said detection means comprises a ground contact confirmation sensor for confirming a contacting state of a sole of said foot part of each of said movable legs with the ground surface (see fig. 1, element particularly 36), and said local control means discriminates satisfaction of the predetermined condition based on sensor values from the ground contact confirmation sensors for said movable legs to perform changeover between said integrated control loop and said local control loop (see fig. 1 and col. 3, lines 45-66); wherein a plurality of pressure sensors are disposed on the sole of the foot part of each of said movable legs, and said local control loop controls driving of the foot parts in response to detection of a variation of any of outputs of said pressure sensors so that said pressure sensors may contact uniformly with the road surface (see col. 4, lines 19-51); wherein said local control means controls driving of the foot parts by said second control system when any of the foot parts is brought into contact with and/or separates from the ground surface while said robot apparatus walks on a rough ground, a descending slope or an ascending slope (see col. 6, lines 15-61, particularly unexpected terrain irregularities).

Allowable Subject Matter

5. Claims 5-10 and 20-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fail to teach or fairly suggest with respect to claims 5 and 20, a robot having an integrated control means issues control instructions including target values successively corrected based on the states of the movable part driving means included in the notifications. With respect to claim 6, a robot that further comprising component ratio adjustment means for adjusting component ratios between the control amounts for said movable part driving means from said integrated control means and the control amounts for said movable part driving means from said local control means. With respect to claim 21, a motion controlling method for a robot that further comprising a component ratio adjustment step for adjusting component ratios between the control amounts by the integrated control step and the control amounts by the local control step.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to McDieunel Marc whose telephone number is (571) 272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


McDieunel Marc

Monday, April 11, 2005

MM/


THOMAS G. BLACK
SUPERVISORY PATENT EXAMINER
ROOM 900-1